Competitive Carriers Association
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May 12, 2014

Via ECFS

Ms. Marlene Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: EX PARTE NOTICE
Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions, GN Docket No. 12-268
Policies Regarding Mobile Spectrum Holdings, WT Docket No. 12-269

Dear Ms. Dortch:

Competitive Carriers Association (CCA), in addition to other parties, has built an extensive record showing that low-frequency spectrum, with its superior in-building and rural propagation characteristics, is important for mobile wireless deployments and effective wireless competition.[1] In particular, Sprint has submitted a series of White Papers[2] and T-Mobile has submitted a declaration by Mark McDiarmid, its Vice President for Radio Network Engineering and Development, to provide additional real world context for the importance of low-band spectrum in improving network performance, expanding network coverage, decreasing network expense and increasing customer

[1] Pursuant to 47 C.F.R. §§ 1.1203(a)(1) and 1.1204(a)(10) as well to 47 C.F.R. §§ 1.1203(c) and 1.1206(b)(2)(v), CCA files this letter with the advance approval of Commission Staff. *See* 47 C.F.R. § 1.1204(a)(10) (authorizing filings during the Sunshine Period made "with the advance approval of Commission Staff"). This letter directly replies to an AT&T *ex parte* letter that was delayed in posting to the FCC's Electronic Comment Filing System ("ECFS") and did not post until Friday, May 9, 2014. *See* Letter from David L. Lawson, Counsel to AT&T, to Marlene H. Dortch, Secretary, FCC, Docket Nos. 12-268 & 12-269 (posted May 9, 2014) ("*AT&T Letter*"); *see also* 47 C.F.R. § 1.1206(b)(2)(v) (authorizing replies to *ex partes* made during the Sunshine Period).

[2] Lawrence R. Krevor *et al.*, *The Imperative for a Weighted Spectrum Screen: Low-, Mid-, and High-Band Frequencies Are Not Freely Substitutable Market Inputs*, attached to Letter from Lawrence R. Krevor, Vice President, Sprint Corp., to Marlene H. Dortch, Secretary, FCC, Docket No. 12-269 (Apr. 4, 2014) ("*Sprint April 4th White Paper*"); Lawrence R. Krevor *et al.*, *Differences Between Frequencies Do Not End at 1 GHz: The Screen Must Account for Differences Between Mid- and High-Band Spectrum*, attached to Letter from Lawrence R. Krevor, Vice President, Sprint Corp., to Marlene H. Dortch, Secretary, FCC, Docket No. 12-269 (May 5, 2014) ("*Sprint May 5th White Paper*").

satisfaction.[3] Rather than seriously dispute these analyses, AT&T has filed an eleventh-hour repetition of previously discredited arguments accompanied by new misrepresentations and half-truths.[4] The latest AT&T filing deserves no weight in the Commission's deliberations.

In their filings, T-Mobile and Sprint demonstrated, both theoretically and empirically, that "electromagnetic signals generally exhibit greater path loss as frequency increases."[5] T-Mobile and Sprint, in addition to CCA, Public Knowledge, U.S. Cellular, and other parties in the record, have also explained how "radiofrequency operations in spectrum bands below 1 GHz exhibit much lower path losses and less susceptibility to signal disruption than operations on wireless broadband in spectrum bands above 1 GHz."[6] Based on these showings, T-Mobile, Sprint, the Antitrust Division of the Department of Justice, and others have explained that mobile operators require a mix of spectrum to provide cost-effective, competitive service.[7]

Rather than address the substance of these technical showings, AT&T simply repeats arguments that it has previously advanced. For example, AT&T continues to twist the truth when it discusses the in-building capabilities of low-band spectrum by extrapolating the results of studies that – in limited and unusual circumstances – certain types of building materials, sized properly and configured in precisely the right orientation, can allow high-frequency signals to achieve higher in-building penetration than low-band signals. AT&T mistakes the exception for the rule and concludes that "all providers must deal with penetration loss in steel and reinforced concrete buildings, but high-frequency spectrum has the advantage in penetrating such buildings because it is more likely to penetrate the windows."[8] This

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[3] *See* Declaration of Mark McDiarmid, Vice President for Radio Network Engineering and Development, T-Mobile USA, Inc., Docket Nos. 12-268 & 12-269 (Apr. 11, 2014) ("*McDiarmid Declaration*").

[4] *See generally AT&T Letter*.

[5] *McDiarmid Declaration* ¶ 7; *see Sprint May 5th White Paper* at 6.

[6] *McDiarmid Declaration* ¶ 7; *see Sprint May 5th White Paper* at 6-9; *see also* John M. Peha, *Comments of Public Knowledge*, Docket Nos. 11-186 & 12-269 (Nov. 28, 2012) (modeling the maximum possible cell size in rural, urban and suburban areas based on frequency and the operating cost impacts of various frequencies' technical characteristics); *Comments of the Competitive Carriers Association*, Docket No. 12-269, at 11 (Nov. 28, 2012) (emphasizing the importance of below-1 GHz spectrum to new entrants because of its ability to provide service with fewer cell sites); *Comments of United States Cellular Corporation*, Docket No. 12-268 at 18 (Jan. 25, 2013); Letter from T-Mobile, DISH, C Spire, Rural Wireless Association, Sprint, Computer and Communications Industry Association, Competitive Carriers Association, Writers Guild of America, West, Public Knowledge, NTCA, and Free Press, to Marlene Dortch, Secretary, FCC, Docket Nos. 12-268 & 12-269 at 2-3 (Mar. 25, 2014) ("*Consensus Letter from T-Mobile, DISH, C Spire, RWA, Sprint, CCIA, CCA, Writers Guild, PK, NTCA, and Free Press*").

[7] *Sprint April 4th White Paper* at ii; *McDiarmid Declaration* ¶ 9; *Ex Parte* Submission of the United States Department of Justice, WT Docket No. 12-269 (filed Apr. 11, 2013) (explaining that by denying competitive carriers access to low-frequency spectrum necessary for an optimal resource mix, the dominant carriers can raise their rivals' cost of providing coverage in any geography – urban, suburban, or rural); Letter from James A. Hyde, CEO & President, NTELOS Holdings Corp., to Marlene H. Dortch, Secretary, FCC, Docket Nos. 12-268 & 12-269 at 2 (filed Apr. 10, 2014) ("*NTELOS Ex Parte*") ("NTELOS does not currently hold any licenses for spectrum below 1 GHz. NTELOS works hard to provide a superior user experience for its subscribers, but there are certain advantages that low-band spectrum provide that cannot be easily replicated by other technological means."); *Consensus Letter from T-Mobile, DISH, C Spire, RWA, Sprint, CCIA, CCA, Writers Guild, PK, NTCA, and Free Press* at 2 ("[C]arriers require a mix of spectrum to provide cost-effective service").

[8] *AT&T Letter* at 5.

conclusion is an egregious mischaracterization of the results of numerous studies that have agreed that penetration losses generally increase with increasing frequency. As Sprint explains based on a meta-analysis of the technical literature, research has found lower-frequency spectrum can better penetrate buildings as a general matter.[9] As CCA understands it, AT&T's conclusion also directly conflicts with T-Mobile's experience,[10] and AT&T fails to offer any reason for this discrepancy or any real-world experience of its own to the contrary.

Indeed, AT&T continues to advance arguments regarding low-band spectrum that directly contravene their public statements to consumers and to investors. For example, in addition to claiming that high-frequency spectrum has an in-building propagation advantage, AT&T argues that deployment in urban and suburban areas are driven "by capacity, not coverage, . . . thus negating the theoretical propagation advantages of . . . low-frequency spectrum."[11] However, in its "Seth the Blogger Guy" campaign, AT&T touted the propagation improvements of low-band spectrum in one of the most urban, capacity-constrained markets in the world: New York City.[12] Certainly New York is a market where cell sizes are constrained by capacity limitations, and certainly New York has plenty of steel and concrete buildings, but AT&T nonetheless trumpeted the advantages of its low-band deployment in the Seth the Blogger Guy video. Specifically, AT&T explained that low-frequency spectrum "provides better in-building service because it is a lower frequency band, and the lower you go in frequency, the further it travels and the better it covers inside buildings."[13] Thus, by introducing a new low-band deployment, AT&T would provide "better in-building service, more capacity for our network and happier customers."[14] Similarly, speaking at Fortune Brainstorm Tech in Aspen, AT&T Chairman and CEO Randall Stephenson told investors that "one of the beauties" of 700 MHz spectrum is that "it propagates like a bandit. It takes fewer cell sites to get a good quality signal, both voice and data to you."[15] Based on the direct conflict between what AT&T is arguing before the Commission and what it is telling investors and customers, AT&T is either misleading the Commission or it is misleading investors and consumers. Based on the extensive record evidence, AT&T's consumer and investor communications provide the more accurate account.

T-Mobile and Sprint have provided real-world and simulated data to show the importance of low-frequency spectrum; however, AT&T has failed to provide any empirical support for its contention that increased expense for low-frequency spectrum removes any distinction between low- and high-frequency spectrum.[16] Tellingly, AT&T discounts or ignores T-Mobile's empirical evidence submitted in

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[9] *See Sprint May 5th White Paper* at 9-11 & n.9 (citing Real Wireless, *Propagation Losses into and within Buildings in the 800, 900, 1800, 2100 and 2600 MHz Bands*, Survey for Ofcom (2012), *available at* http://bit.ly/Qd4cfm (Annex A)).

[10] *See, e.g.*, *McDiarmid Declaration* ¶ 13 ("[T]wo of our vendors independently concluded that low-band spectrum experiences 2 to 3 dB less attenuation than high-band spectrum when passing through common building materials to provide coverage inside buildings.").

[11] *AT&T Letter* at 10.

[12] *See* AT&T, *AT&T Strengthens 3G Wireless Coverage in New York and New Jersey* (Sept. 8, 2010), http://www.youtube.com/watch?v=8ZsfefaezNY&noredirect=1 ("*Seth the Blogger Guy Video*") (original video was posted directly to AT&T's website but has since been removed and only remains available through archives of other sites).

[13] *See id.*

[14] *Id.*

[15] Transcript: AT&T's Randall Stephenson on the Network's Strength, CNN MONEY (July 18, 2012), *available at* http://tech.fortune.cnn.com/2012/07/18/randall-stephenson-att/.

[16] *See AT&T Letter* at 2-4.

the record even as it criticizes Sprint's analysis of coverage areas.[17] AT&T argues that "Sprint suggests that AT&T may have more cell sites than Sprint because AT&T has more extensive geographic coverage than Sprint, but it provides no evidence no [*sic*] support that claim."[18] AT&T could have responded to Sprint's well-reasoned argument by providing coverage comparisons, a table showing the number of square miles covered by each operator, or any solid evidence that the compared footprints are identical in its redacted filing. It is clear that AT&T provides no information whatsoever in response.

Instead, AT&T simply argues "Sprint has clearly had maximum incentives to ensure comparable coverage to AT&T during the last decade" and "Sprint's online coverage maps purport to cover these top 10 [Cellular Market Areas ("CMAs")]."[19] Of course, the coverage maps (including those in advertisements that have received so much television airtime) entered into the record readily show that AT&T's network is far more extensive than Sprint's.[20] AT&T, without any of its own evidence, wants the Commission to believe that, at the very least, AT&T's coverage is not more extensive than Sprint's in the Top 10 CMAs. However, AT&T neglects to mention that the average area of the Top 10 CMAs is nearly 8,000 square miles, and the Top 10 CMAs include nearly 30,000 square miles of area (or roughly three-eighths the total area) where the population density is less than 200 people per sq. mile. It is thus no surprise that AT&T did not produce maps or data to suggest that Sprint's coverage is actually somehow more extensive. To take just one of the top 10 CMAs as an example, comparing AT&T's coverage to Sprint's coverage in the Dallas-Fort Worth CMA (the fourth largest CMA according to the 2010 census data), as illustrated in Figure 1 on the following page, shows that AT&T's coverage is significantly more extensive than Sprint's, both in terms of overall coverage and in terms of roaming required.

AT&T attempts a similar sleight of hand to refute T-Mobile's analysis showing that T-Mobile could serve the Economic Area ("EA") with fewer sites if it had access to low-band spectrum.[21] AT&T reviewed the Dallas-Fort Worth CMA (only a subset of the Dallas EA) to argue that T-Mobile could not provide similar service with fewer towers because AT&T has slightly more cell sites in the CMA, and it uses low-band spectrum.[22] Putting aside that AT&T is comparing the EA to CMA, AT&T fails to mention the improved coverage that AT&T's network achieves in the Dallas CMA, as illustrated in Figure 1 on the following page, which shows that AT&T and Verizon achieve virtually complete coverage throughout the CMA while Sprint and T-Mobile achieve somewhat less complete coverage and must rely more extensively on roaming. Moreover, AT&T does not discuss how T-Mobile replicated the results of Dallas study in *22 additional markets*, including markets of varying size, terrain, population density, and average building height and density.[23]

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[17] *Compare* Letter from Trey Hanbury, Counsel to T-Mobile USA, Inc., to Marlene Dortch, Secretary, FCC, Docket Nos. 12-268 & 12-269 (filed Jan. 29, 2014) (using a forward-looking cost model to show that the increased costs associated with mid-band spectrum deployment can be *thousands of times higher* than low-band spectrum deployment), *with AT&T Letter* at 2-4.

[18] *AT&T Letter* at 7.

[19] *See* Jeffrey H. Reed and Nishith D. Tripathi, *The Value of Spectrum: A Further Response to* Sprint, at 22 (May 9, 2014) ("*Reed & Tripathi Paper*"), *attached to* AT&T Letter.

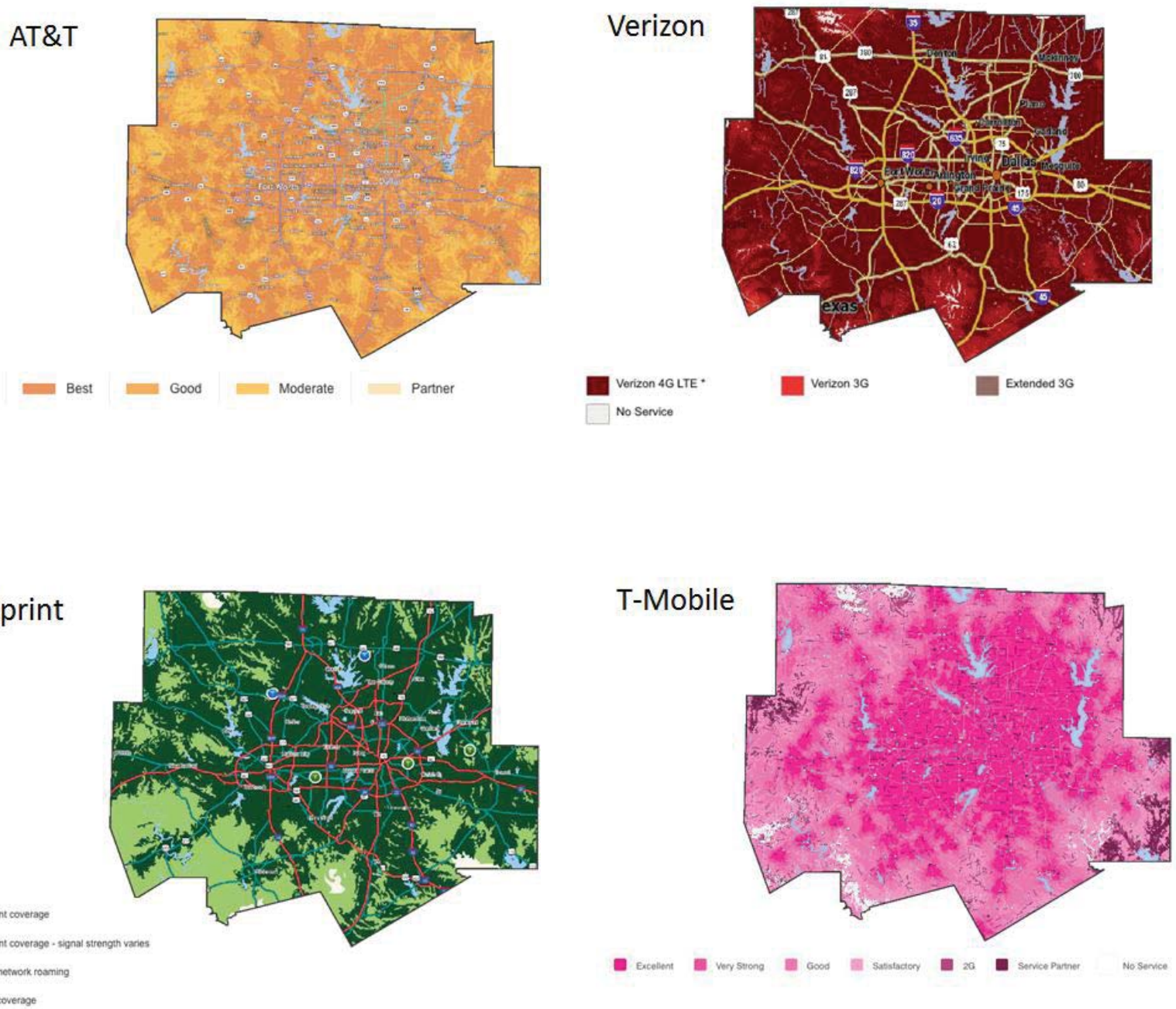
[20] *See e.g.*, Verizon, *For Best Results, Use Verizon* (last accessed May 9, 2014), http://vz.to/1ixwWpm.

[21] *See McDiarmid Declaration* ¶ 12; Reed & Tripathi Paper at 22.

[22] *See Reed & Tripathi Paper* at 22.

[23] *McDiarmid Declaration* ¶ 17 ("700 MHz designs in such disparate markets as Miami, Fresno, Philadelphia, Cleveland, Minneapolis, and Houston, to name just a few, will achieve significant,

Figure 1: Comparison of AT&T, Verizon, Sprint and T-Mobile's Coverage in the Dallas-Fort Worth Cellular Market Area[24]



perceptible, and impactful indoor coverage improvements while using less infrastructure at a substantial savings and while offering T-Mobile the opportunity to expand its footprint.").

[24] The coverage maps depicted in Figure 1 are drawn from each carrier's website and may reflect a composite view of numerous smaller depictions of local area of coverage provided by each carrier.

AT&T also severely exaggerates T-Mobile's low-frequency holdings, arguing that T-Mobile "*already ha*[*s* a] low-frequency coverage layer[]" based on its recent transaction with Verizon because that transaction covers 70 percent of T-Mobile's customer base.[25] However, AT&T neglects to discuss that, as T-Mobile has previously explained, the spectrum T-Mobile has acquired covers only half the population of the United States and represents only about 4% of nationwide low-band spectrum.[26] The 700 MHz A Block transaction ignores the fact that the two largest carriers still hold well over two-thirds of that resource nationally, and fails to recognize the competitive need for T-Mobile or other carriers to secure greater access to low-band spectrum.[27]

Ultimately, if low-band spectrum were as freely interchangeable with other spectrum as AT&T now argues, then AT&T would not repeatedly argue for uninhibited access to this critical resource. Of course, low-band spectrum is vital to competitive carriers, and AT&T fully recognizes that. Ensuring that competitive carriers have a fair chance to acquire low-band spectrum – as is contemplated by the Commission's proposed reserved license framework – will promote wireless competition, stimulate innovation, and benefit consumers.

This *ex parte* notification is being filed electronically with your office pursuant to Section 1.1206 of the Commission's Rules.

Sincerely,

/s/ Rebecca Murphy Thompson

Rebecca Murphy Thompson
General Counsel

/s/ Doug Hyslop

Doug Hyslop
Wireless Strategy, LLC
Technical Advisor to CCA

[25] *See AT&T Letter* at 4 (emphasis in original).

[26] *See* Letter from Trey Hanbury, Counsel to T-Mobile USA, Inc., to Marlene Dortch, Secretary, FCC, Docket Nos. 12-268 & 12-269 at 2 (filed Apr. 11, 2014).

[27] *See id*; *NTELOS Ex Parte* at 2.